

SEQUENCE LISTING

<110> GARCIA-CALVO, MARIA MARGARITA

<120> NPC1L1 (NPC3) AND METHODS OF IDENTIFYING LIGANDS THEREOF

<130> 059893-0121

<140> 10/586,310

<141> 2007-05-31

<150> PCT/US05/01469

<151> 2005-01-14

<150> 60/537,341

<151> 2004-01-16

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<170> PatentIn version 3.5

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Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
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Tyr Leu Leu Leu Gly Leu Asp Met Cys Ser Gly Ile Leu Asn Leu
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Leu Ser Ile Ile Met Ile Leu Val Asp Thr Ile Gly Leu Met Ala
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Val Trp Gly Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val
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Thr Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg
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Ser Phe Ala Val Ser Thr Lys Pro Thr Arg Leu Glu Arg Ala Lys
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Asp Ala Thr Val Phe Met Gly Ser Ala Val Phe Ala Gly Val Ala
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Met Thr Asn Phe Pro Gly Ile Leu Ile Leu Gly Phe Ala Gln Ala
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Gln Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr
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Leu Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Val Leu
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Ser Tyr Leu Gly Pro Asp Val Asn Gln Ala Leu Val Gln Glu Glu
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Lys Leu Ala Ser Glu Ala Ala Val Ala Pro Glu Pro Ser Cys Pro
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Gln Tyr Pro Ser Pro Ala Asp Ala Asp Ala Asn Val Asn Tyr Gly
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cgc ttg gcc cag agt gag cct tac aca acc atc cac cag cct ggc tac 96
Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr
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tgc gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc 144
Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
35 40 45

ctc atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc	192
Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg	
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Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg	
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ctc tac acc ggc ccc aac acc caa gcc tgc tgc tcc gcc aag cag ctg	288
Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu	
85 90 95	
gta tca ctg gaa gcg agt ctg tcg atc acc aag gcc ctc ctc acc cgc	336
Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg	
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Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr	
115 120 125	
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Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln	
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Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr	
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Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg	
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Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr	
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Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp	
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aca ggc aat ggt ctg gcc cca ctg gac atc acc ttc cac ctc ttg gag	672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu	
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Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val	
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Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys	
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Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu	
260 265 270	

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agt ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn 485 490 495	1488

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acc tcc caa gtc gac tgg aag gac cat ttt ctg tac tgt gcc aat gcc Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala 515 520 525	1584
ccg ctc acc ttc aag gat ggc aca gcc ctg gcc ctg agc tgc atg gct Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala 530 535 540	1632
gac tac ggg gcc cct gtc ttc ccc ttc ctt gcc att ggg ggg tac aaa Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys 545 550 555 560	1680
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Tyr	Gln	Arg	Leu	Pro	Arg	Arg	Pro	Gly	Glu	Pro	Arg	Glu	Val	His	Ile	
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Gly	Arg	Ala	Leu	Gly	Arg	Val	Ala	Pro	Ser	Met	Leu	Leu	Cys	Ser	Leu	
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Ser	Glu	Ala	Ile	Cys	Phe	Phe	Leu	Gly	Ala	Leu	Thr	Pro	Met	Pro	Ala	
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gtg	cgg	acc	ttt	gcc	ctg	acc	tct	ggc	ctt	gca	gtg	atc	ctt	gac	ttc	2352
Val	Arg	Thr	Phe	Ala	Leu	Thr	Ser	Gly	Leu	Ala	Val	Ile	Leu	Asp	Phe	
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ctc	ctg	cag	atg	tca	gcc	ttt	gtg	gcc	ctg	ctc	tcc	ctg	gac	agc	aag	2400
Leu	Leu	Gln	Met	Ser	Ala	Phe	Val	Ala	Leu	Leu	Ser	Leu	Asp	Ser	Lys	
785					790				795						800	
agg	cag	gag	gcc	tcc	cgg	ttg	gac	gtc	tgc	tgc	tgt	gtc	aag	ccc	cag	2448
Arg	Gln	Glu	Ala	Ser	Arg	Leu	Asp	Val	Cys	Cys	Cys	Val	Lys	Pro	Gln	
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Glu	Leu	Pro	Pro	Pro	Gly	Gln	Gly	Glu	Gly	Leu	Leu	Leu	Gly	Phe	Phe	
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Gln	Lys	Ala	Tyr	Ala	Pro	Phe	Leu	Leu	His	Trp	Ile	Thr	Arg	Gly	Val	
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Val	Leu	Leu	Leu	Phe	Leu	Ala	Leu	Phe	Gly	Val	Ser	Leu	Tyr	Ser	Met	
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Cys	His	Ile	Ser	Val	Gly	Leu	Asp	Gln	Glu	Leu	Ala	Leu	Pro	Lys	Asp	
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tcg	tac	ctg	ctt	gac	tat	ttc	ctc	ttt	ctg	aac	cgc	tac	ttc	gag	gtg	2688
Ser	Tyr	Leu	Leu	Asp	Tyr	Phe	Leu	Phe	Leu	Asn	Arg	Tyr	Phe	Glu	Val	
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Gly	Ala	Pro	Val	Tyr	Phe	Val	Thr	Thr	Leu	Gly	Tyr	Asn	Phe	Ser	Ser	
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Glu	Ala	Gly	Met	Asn	Ala	Ile	Cys	Ser	Ser	Ala	Gly	Cys	Asn	Asn	Phe	
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Ser	Phe	Thr	Gln	Lys	Ile	Gln	Tyr	Ala	Thr	Glu	Phe	Pro	Glu	Gln	Ser	
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Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys	
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Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn	
980 985 990	
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Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe	
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His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys	
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Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu	
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Thr Ser Asp Gly Gln Val Leu Ala Ser Arg Phe Met Ala Tyr His	
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Asn Val Phe Tyr Glu Gln Tyr Leu Thr Ile Leu Pro Glu Gly Leu	
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Trp Asp Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser	
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Tyr Val Gly Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys	
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Asn His Pro Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn	
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Cys	Ala	Phe	Tyr	Asp	Glu	Cys	Gly	Lys	Asn	Pro	Glu	Leu	Ser	Gly	Ser	35	40	45
Leu	Met	Thr	Leu	Ser	Asn	Val	Ser	Cys	Leu	Ser	Asn	Thr	Pro	Ala	Arg	50	55	60
Lys	Ile	Thr	Gly	Asp	His	Leu	Ile	Leu	Leu	Gln	Lys	Ile	Cys	Pro	Arg	65	70	75
Leu	Tyr	Thr	Gly	Pro	Asn	Thr	Gln	Ala	Cys	Cys	Ser	Ala	Lys	Gln	Leu	85	90	95
Val	Ser	Leu	Glu	Ala	Ser	Leu	Ser	Ile	Thr	Lys	Ala	Leu	Leu	Thr	Arg	100	105	110
Cys	Pro	Ala	Cys	Ser	Asp	Asn	Phe	Val	Asn	Leu	His	Cys	His	Asn	Thr	115	120	125
Cys	Ser	Pro	Asn	Gln	Ser	Leu	Phe	Ile	Asn	Val	Thr	Arg	Val	Ala	Gln	130	135	140
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Gln	His	Ser	Phe	Ala	Glu	Gln	Ser	Tyr	Asp	Ser	Cys	Ser	Arg	Val	Arg	165	170	175
Val	Pro	Ala	Ala	Ala	Thr	Leu	Ala	Val	Gly	Thr	Met	Cys	Gly	Val	Tyr	180	185	190
Gly	Ser	Ala	Leu	Cys	Asn	Ala	Gln	Arg	Trp	Leu	Asn	Phe	Gln	Gly	Asp	195	200	205
Thr	Gly	Asn	Gly	Leu	Ala	Pro	Leu	Asp	Ile	Thr	Phe	His	Leu	Leu	Glu	210	215	220
Pro	Gly	Gln	Ala	Val	Gly	Ser	Gly	Ile	Gln	Pro	Leu	Asn	Glu	Gly	Val	225	230	235
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Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
 245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
 260 265 270

Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
 275 280 285

Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
 290 295 300

Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
 305 310 315 320

Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
 325 330 335

Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro
 340 345 350

Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
 355 360 365

Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
 370 375 380

Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
 385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
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Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
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Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
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Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
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Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
 465 470 475 480

Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
 485 490 495

Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
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Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
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Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
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Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
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Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
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Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
 580 585 590

Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
 595 600 605

Gly Met Phe Gln Val Thr Phe Thr Ala Glu Arg Ser Leu Glu Asp Glu
 610 615 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
 625 630 635 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
 645 650 655

Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
 660 665 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
 675 680 685

Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
 690 695 700

Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705 710 715 720

Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
725 730 735

Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
770 775 780

Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785 790 795 800

Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
805 810 815

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Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
835 840 845

Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met
850 855 860

Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865 870 875 880

Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val
885 890 895

Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser
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Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe
915 920 925

Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
930 935 940

Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
 945 950 955 960

Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
 965 970 975

Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
 980 985 990

Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe
 995 1000 1005

His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys
 1010 1015 1020

Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu
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Thr Ser Asp Gly Gln Val Leu Ala Ser Arg Phe Met Ala Tyr His
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Lys Pro Leu Lys Asn Ser Gln Asp Tyr Thr Glu Ala Leu Arg Ala
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Ala Arg Glu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val
 1070 1075 1080

Pro Gly Thr Asp Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr
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Asn Val Phe Tyr Glu Gln Tyr Leu Thr Ile Leu Pro Glu Gly Leu
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Phe Met Leu Ser Leu Cys Leu Val Pro Thr Phe Ala Val Ser Cys
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Leu Leu Leu Gly Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu
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Ser Ile Val Met Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu
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Trp Asp Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser
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Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg Ser
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Phe Ala Ile Ser Thr Lys Pro Thr Trp Leu Glu Arg Ala Lys Glu
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Ala Thr Ile Ser Met Gly Ser Ala Val Phe Ala Gly Val Ala Met
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Thr Asn Leu Pro Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln
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Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu
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Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser
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Tyr Val Gly Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys
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Arg Ala Glu Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro
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Asn His Pro Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn
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Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu	
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Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His	
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Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr	
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Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu
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Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu
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Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
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Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr
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Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
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Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg
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Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
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Thr	Gly	Asn	Gly	Leu	Ala	Pro	Leu	Asp	Ile	Thr	Phe	His	Leu	Leu	Glu		
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Pro	Gly	Gln	Ala	Leu	Ala	Asp	Gly	Met	Lys	Pro	Leu	Asp	Gly	Lys	Ile		
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Gln	Asp	Cys	Ala	Ala	Ser	Cys	Pro	Val	Ile	Pro	Pro	Pro	Pro	Ala	Leu		
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Arg	Pro	Ser	Phe	Tyr	Met	Gly	Arg	Met	Pro	Gly	Trp	Leu	Ala	Leu	Ile		
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Ile	Ile	Phe	Thr	Ala	Val	Phe	Val	Leu	Leu	Ser	Val	Val	Leu	Val	Tyr		
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Leu	Arg	Val	Ala	Ser	Asn	Arg	Asn	Lys	Asn	Lys	Thr	Ala	Gly	Ser	Gln		
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Glu	Ala	Pro	Asn	Leu	Pro	Arg	Lys	Arg	Arg	Phe	Ser	Pro	His	Thr	Val		
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Leu	Gly	Arg	Phe	Phe	Glu	Ser	Trp	Gly	Thr	Arg	Val	Ala	Ser	Trp	Pro		
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Leu	Thr	Val	Leu	Ala	Leu	Ser	Phe	Ile	Val	Val	Ile	Ala	Leu	Ser	Val		
		355					360					365					
Gly	Leu	Thr	Phe	Ile	Glu	Leu	Thr	Thr	Asp	Pro	Val	Glu	Leu	Trp	Ser		
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Ala	Pro	Lys	Ser	Gln	Ala	Arg	Lys	Glu	Lys	Ala	Phe	His	Asp	Glu	His		
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Phe	Gly	Pro	Phe	Phe	Arg	Thr	Asn	Gln	Ile	Phe	Val	Thr	Ala	Lys	Asn		
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Arg	Ser	Ser	Tyr	Lys	Tyr	Asp	Ser	Leu	Leu	Leu	Gly	Pro	Lys	Asn	Phe
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Ser	Gly	Ile	Leu	Ser	Leu	Asp	Leu	Leu	Gln	Glu	Leu	Leu	Glu	Leu	Gln
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Glu	Arg	Leu	Arg	His	Leu	Gln	Val	Trp	Ser	His	Glu	Ala	Gln	Arg	Asn
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Ile	Ser	Leu	Gln	Asp	Ile	Cys	Tyr	Ala	Pro	Leu	Asn	Pro	His	Asn	Thr
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Ser	Leu	Thr	Asp	Cys	Cys	Val	Asn	Ser	Leu	Leu	Gln	Tyr	Phe	Gln	Asn
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Asn	His	Thr	Leu	Leu	Leu	Leu	Thr	Ala	Asn	Gln	Thr	Leu	Asn	Gly	Gln
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Thr	Ser	Leu	Val	Asp	Trp	Lys	Asp	His	Phe	Leu	Tyr	Cys	Ala	Asn	Ala
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Pro	Leu	Thr	Tyr	Lys	Asp	Gly	Thr	Ala	Leu	Ala	Leu	Ser	Cys	Ile	Ala
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Gly	Thr	Asp	Tyr	Ser	Glu	Ala	Glu	Ala	Leu	Ile	Ile	Thr	Phe	Ser	Ile
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Asn	Asn	Tyr	Pro	Ala	Asp	Asp	Pro	Arg	Met	Ala	His	Ala	Lys	Leu	Trp
			580					585					590		
Glu	Glu	Ala	Phe	Leu	Lys	Glu	Met	Gln	Ser	Phe	Gln	Arg	Ser	Thr	Ala
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Trp Ser Arg Val Ala Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
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Leu	Ser	Ile	Ile	Met	Ile	Leu	Val	Asp	Thr	Ile	Gly	Leu	Met	Ala
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Asp	Ala	Thr	Ile	Phe	Met	Gly	Ser	Ala	Val	Phe	Ala	Gly	Val	Ala
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Met	Thr	Asn	Phe	Pro	Gly	Ile	Leu	Ile	Leu	Gly	Phe	Ala	Gln	Ala
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Gln	Leu	Ile	Gln	Ile	Phe	Phe	Phe	Arg	Leu	Asn	Leu	Leu	Ile	Thr
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Leu	Leu	Gly	Leu	Leu	His	Gly	Leu	Val	Phe	Leu	Pro	Val	Val	Leu
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Ser	Tyr	Leu	Gly	Pro	Asp	Val	Asn	Gln	Ala	Leu	Val	Leu	Glu	Glu
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Lys	Leu	Ala	Thr	Glu	Ala	Ala	Met	Val	Ser	Glu	Pro	Ser	Cys	Pro
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Gln	Tyr	Pro	Phe	Pro	Ala	Asp	Ala	Asn	Thr	Ser	Asp	Tyr	Val	Asn
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Tyr	Gly	Phe	Asn	Pro	Glu	Phe	Ile	Pro	Glu	Ile	Asn	Ala	Ala	Ser
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 aayccngary tnwsngngng nytnacwnsn ytnwsnaaya thwsntgyyt nwsnaayacn 180
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 Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr Cys
 20 25 30

gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc ctc 203
 Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser Leu
 35 40 45

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Ile	Thr	Gly	Asp	His	Leu	Ile	Leu	Leu	Gln	Lys	Ile	Cys	Pro	Arg	Leu	
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Pro	Ala	Cys	Ser	Asp	Asn	Phe	Val	Asn	Leu	His	Cys	His	Asn	Thr	Cys	
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Gly	Gln	Ala	Val	Gly	Ser	Gly	Ile	Gln	Pro	Leu	Asn	Glu	Gly	Val	Ala	
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Arg	Cys	Asn	Glu	Ser	Gln	Gly	Asp	Asp	Val	Ala	Thr	Cys	Ser	Cys	Gln	
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Asp	Cys	Ala	Ala	Ser	Cys	Pro	Ala	Ile	Ala	Arg	Pro	Gln	Ala	Leu	Asp	
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Gln	Arg	Leu	Pro	Arg	Arg	Pro	Gly	Glu	Pro	Arg	Glu	Val	His	Ile	Gly	
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Lys	Ala	Tyr	Ala	Pro	Phe	Leu	Leu	His	Trp	Ile	Thr	Arg	Gly	Val	Val	
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Tyr	Leu	Leu	Asp	Tyr	Phe	Leu	Phe	Leu	Asn	Arg	Tyr	Phe	Glu	Val	Gly	
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Ala	Gly	Met	Asn	Ala	Ile	Cys	Ser	Ser	Ala	Gly	Cys	Asn	Asn	Phe	Ser	
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Phe	Thr	Gln	Lys	Ile	Gln	Tyr	Ala	Thr	Glu	Phe	Pro	Glu	Gln	Ser	Tyr	
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Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu Thr	
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Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr Asn Val Phe Tyr	
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Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
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Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg
50          55          60

Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg
65          70          75          80

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205

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Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
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Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
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Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
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Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
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Val	Leu	Leu	Leu	Phe	Leu	Ala	Leu	Phe	Gly	Val	Ser	Leu	Tyr	Ser	Met	850	855		860
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